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1. Morphological similarities may be induced by wholly distinct causes and may serve wholly different ends.
2. The majority of species (both vegetable and animal) are stable. Temporary lability may be induced artificially or otherwise. All subsequent changes again tend toward the stable form.
3. The form of the lichen-thallus indicates a special morphological adaptation to favor the function of assimilation.
4. The phylogenetic morphological characters of lichens are of great significance in the formation of a natural system as well as in the consideration of phylogenesis in general.
5. The more recently acquired characters of lichens are to be found in the thallus; the oldest in the apothecial structures.
6. The entire lichen-structure has undergone considerable change since its phylogenetic history.

New or Noteworthy American Grasses.—V.

BY GEO. V. NASH.

ERIANTHUS TRACYI n. sp.

Culms stout, erect, 2–4 m. high, smooth and glabrous, the nodes upwardly barbed with deciduous silky hairs, about 1 cm. long; sheaths closely embracing the culm, shorter than the internodes, smooth, glabrous, except at the apex, where they are pubescent with deciduous, long, silky, appressed hairs; ligule rounded, about 5 mm. long; leaves 5 dm. long or more, 1.5–3 cm. broad, narrowed toward the base, long-acuminate toward the apex, strongly scabrous on both surfaces, pilose on the upper side toward the base; panicle oblong, 3–5 dm. long, 8–12 cm. wide, cream-white, dense, the main axis and branches pubescent with long appressed silky hairs, the branches usually in 2's, much divided, ascending or nearly erect, 15 cm. long or less; spikelets lanceolate, 5–6 mm. long, about one-half again as long as the internodes, yellowish brown, usually marked with red, less than one-half the length of the involucre hairs; first and second scales firm-membranous, the former a little the longer, both pubescent with silky hairs, twice the length of the scales, the first acuminate, faintly 7-nerved at the base, 2-toothed and prominently 2-nerved at the apex, the two nerves scabrous, the second scale acute, the nerves hardly discernible; third and fourth scales hyaline, shorter than the first and second ones, ciliate on the margins, the third acute,

1-nerved, the fourth narrower, **acuminate**, 2-toothed, conspicuously 1-nerved, the nerve excurrent as a straight or slightly twisted (not spiral) awn, 1.5–2 cm. long.

Type collected at Starkville, Miss., on October 1, 1896, by Prof. S. M. Tracy, in whose honor I take pleasure in naming it. C. L. Pollard's no. 1,341, collected at the same locality, in August of the past year, is the same. Mr. Pollard informs me that it grows on moist open slopes.

The larger and denser panicle, the longer hairs both on the outer scales and at the base of the spikelet, and the longer awn, which is straight or nearly so (not coiled), readily separate it from *E. alopecuroides* L. The base of the awn in *E. Tracyi*, that portion included in the outer scales, is loosely twisted, while the same portion in *E. alopecuroides* is closely coiled.

At the present time I only have specimens from Mississippi, and would be exceedingly glad to receive more material from other localities.

PASPALUM BLODGETII Chapman.

It would seem best to maintain the above name, although perhaps not the oldest, for the plants that have been referred to *P. caespitosum* Fluegge. Chapman's type is preserved in the Herbarium of Columbia University, so that the positive identification of that species is possible. One of the forms which has been placed here is very different and surely worthy of specific rank. I have taken it out and described it below as new. Its differences from the plants here under consideration are there pointed out.

The reason which seems to make it desirable to maintain Chapman's name instead of Fluegge's is the inability to make the plants in my possession, which have been referred to *P. caespitosum*, agree with the description of Fluegge. He says, among his differentiating characters, that the scales are 5-nerved and the rachis as broad as the spikelets. In all the specimens at my disposal the scales are only 3-nerved and the rachis but one-half to two-thirds as wide as the spikelets. If this should be found to be true in all the specimens that have been referred to this species it would throw considerable doubt upon the validity of past determinations. As no certainty is possible in the matter of Fluegge's name until his type can be seen, it would seem preferable to

adopt, for the present at least, Chapman's name, about which there can be no doubt, as above stated. The *P. caespitosum longifolium* of Dr. Vasey would seem to me hardly worthy of the rank of a variety, as both long and short leaves occur on the same plant.

PASPALUM SIMPSONI n. sp.

Culms, upper sheaths, and surfaces of the leaves smooth and glabrous. Culms erect, slender, 2–8 dm. tall; sheaths loosely embracing the culm, the basal ones short and appressed-villous, the remainder longer and usually much exceeded by the internodes of the mature culms, the uppermost one elongated; ligule very short and truncate; leaves erect or ascending, lanceolate, or linear-lanceolate, 2.5–14 cm. long, 2–10 mm. wide, rounded or slightly cordate at the base, acuminate at the apex, ciliate, glaucescent above; inflorescence 8–16 cm. long, the first internode of the main axis 3.5–5 cm. in length, the remainder gradually becoming shorter; spikes usually strict, 3–5, spreading or ascending, 2.5–7.5 cm. long, pubescent and pilose at the base, the rachis flat, winged, one-half to two-thirds as broad as the spikelets, narrower and more or less flexuous toward the apex, minutely scabrous on the margins; spikelets in 4 rows, in pairs on flattened minutely scabrous shorter pedicels, obicular-obovate, 1.5 mm. long, the two outer scales membranous, 3-nerved, the first one concave, pubescent with short spreading glandular-tipped hairs, the second flat, glabrous, or sparingly pubescent at the very base, the third scale chartaceous, concave, smooth and shining, yellowish, enclosing a palet of equal length and similar texture.

Collected by J. H. Simpson on No Name Key, Florida, in May, 1891, no. 184. I take pleasure in naming this grass in honor of Mr. Simpson, whose extensive collections in southern peninsular Florida, have added much to the knowledge of the flora of that most interesting region. The *Paspalum* in question has been confounded with *P. caespitosum* Fluegge, a discussion of which species occurs above under *P. Blodgettii*, and Mr. Simpson's plant, referred to previously, was distributed under the former name. Curtiss' no. 5440, collected at the same locality on June 26, 1895, is this same plant and was also distributed as *P. caespitosum*.

This grass is readily distinguished from *P. Blodgettii*, to which it is related, by its smaller and differently shaped spikelets, the pubescence of which is short, spreading and glandular-tipped, and by the broader and manifestly ciliate leaves. The spikelets in

P. Blodgettii are elliptic or elliptic-obovate, about one-half longer, and the pubescence scantier and composed of much longer hairs, which are appressed and not glandular-tipped; the leaves, moreover, are sparingly, if at all, ciliate.

PASPALUM VILLOSISSIMUM n. sp.

Whole plant, except the culm and spikelets, densely vilous, particularly the lower sheaths. Culms erect, smooth and glabrous, 5–10 dm. tall, from a thick and more or less branching rootstock, extending, when mature, much beyond the uppermost sheath, branching at the highest node, the usually single branch exerted but little beyond the sheath; nodes purple; sheaths loosely embracing the culm, those at the base short and overlapping, the remainder elongated, the uppermost sometimes without a leaf blade; ligule truncate, less than .5 mm. long; leaves erect, linear-lanceolate to lanceolate, 3–20 cm. long, 3–10 mm. wide, truncate or slightly rounded at the base, long-acuminate toward the apex, a ring of long hairs at the very base immediately above the ligule; spike single, rarely with an additional one below, slender, usually strict, or the longer a little arcuate, 7–11 cm. long, the rachis flat, about two-thirds as wide as the spikelets, wing-margined, somewhat flexuous, the margins serrulate; spikelets orbicular-obovate, .8–.9 mm. long, .75 mm. wide, by pairs, in four rows, on hispidulous pedicels about one-half their length; first and second scales membranous, strongly pubescent with short spreading glandular-tipped hairs, the former concave and 3-nerved, the latter flat with inrolled margins, 2-nerved; third scale similar in shape to the first, greenish white, chartaceous or coriaceous, enclosing a palet of equal length and similar texture.

Type collected by the writer at Eustis, Lake County, Florida, early in June, 1894, no. 946, and distributed as *P. setaceum*, from which it seems clearly distinct, the shorter and broader leaves and the pubescent spikelets readily separating it from that species. It resembles *P. dasyphyllum* Ell. in its pubescence, but its slender long-exserted culms and the slender spikes, usually single, serve well to distinguish it. In *P. dasyphyllum* the culm is much stouter, and the thicker spikes 2–4 in number, rarely 1.

Nos. 2019, collected at the same place, and 2416a at Tampa, both in 1895, belong here.

PANICUM ALBO-MARGINATUM n. sp.

Whole plant, with the exception of the spikelets and the lowermost sheaths, smooth and glabrous. Culms erect, slender, 1.5–4.5 dm. tall, somewhat branched toward the base; sheaths short, often

sparingly ciliate on the margins, those on the culm one-third the length of the internodes or less, 1.5–2.5 cm. long, those on the branches shorter and overlapping, 1 cm. long or less; ligule a ring of short hairs about .25 mm. long; leaves thick, erect, lanceolate, 1.5–4.5 cm. long, 2–8 mm. wide, acuminate, somewhat narrowed and rounded at the base, with a prominent thick, white, cartilaginous, serrulate margin about .25 mm. wide; panicle ovate in outline, the primary ones long-exserted, 2.5–4 cm. long, the branches ascending; the panicles on the branches smaller, shorter than the uppermost leaf; spikelets 1.5 mm. long, broadly obovate, obtuse, diverging from the branches; first scale orbicular, glabrous, one-fourth to one-third as long as the spikelet; second and third scales membranous, 7-nerved, strongly pubescent with short spreading hairs, the latter enclosing a hyaline palet about one-half its length; fourth scale chartaceous, oval, obtuse, 1.25 cm. long, about .8 mm. wide, enclosing a palet of equal length and similar texture.

Collected by the writer in the low pine land at Eustis, Lake County, Florida, early in June, 1894, no. 925. In habit it is much like *P. sphaerocarpon* Ell. It is probably the *P. nitidum* of Elliott.

PANICUM LATIFOLIUM L.

It may be of interest to call attention to a remark of Trinius in relation to this species, although the evidence as to what plant Linnaeus had in mind is so strong that it would hardly seem worth while to allude to it further. Trinius (Mem. Acad. St. Petersburg, VI., 3: Pt. 2, 262, 1834), in the latter part of his description of this species, makes the following statement in parenthesis:

“Ob quam notam et ob Sloanei iconem optimam de Linnaei planta dubium nullum.”

PANICUM LEUCOTHRIX n. sp.

Culms caespitose, 1–4.5 dm. tall, erect or ascending, somewhat branched, sparingly pubescent with ascending hairs, the nodes glabrous. Sheaths less than one-half as long as the internodes, 2 cm. long or less, usually purplish, pubescent with ascending or nearly appressed long white hairs, those at the base of the sheath more dense and spreading; ligule a ring of long white, erect hairs; leaves erect or nearly so, lanceolate, 2–6 cm. long, 3–7 mm. wide, acuminate at the apex, truncate or rounded at the partly clasping base, 7–9-nerved, rough and glabrous above or with a few minute scattered hairs, pubescent below with short appressed hairs; panicle ovate or oval, 2.5–6 cm. long, 2–4 cm. broad, its branches spreading or ascending, 2.5 cm. long or less; spikelets obovate, about .65 mm. long, .4 mm. wide; first scale membranous, one-quarter to one-third as long as the spikelet, orbicular-ovate, obtuse,

1-nerved; second and third scales membranous, equal in length, 7-nerved, strongly pubescent with short spreading hairs; fourth scale chartaceous, elliptic, yellowish-white, enclosing a palet of equal length and similar texture.

Type collected by the writer in the low pine land at Eustis, Lake County, Florida, in the latter part of July, 1894, no. 1338. Nos. 334 and 467, of the same collection, also belong here.

Panicum manatense n. sp.

Whole plant, with the few exceptions described below, smooth and glabrous. Culms 2–4 dm. long, strongly striate-grooved, decumbent, much branched, the lower and longer internodes arcuate; nodes often yellowish on one side; sheaths loose, ciliate along the margins, at least when young, the lower ones much shorter than the internodes, those at and toward the extremities of the branches crowded and overlapping; ligule truncate, very short; leaves erect or nearly so; lanceolate 3.5–9 cm. long, 7–15 mm. wide, acuminate at the apex, rounded at the sparsely ciliate base, 9–13-nerved; panicle ovate in outline, 4–6 cm. long, its branches single and divided almost to the base, 1.5–3 cm. long, ascending; spikelets on ascending pedicels usually longer than themselves, elliptic about 3.5 mm. long, 1.3 mm. wide, very acute; first scale membranous, slightly exceeding one-third the length of the spikelet, ovate, acute, 1–3-nerved; second and third scales 7–9-nerved, membranous, acute, strongly pubescent with spreading hairs, the latter with a hyaline palet about one-third its length; fourth scale chartaceous, elliptic 2.5 mm. long, strongly apiculate, enclosing a palet of similar texture as long as itself.

Collected by the writer on August 21, 1895, near a sulphur well in a wet hammock northeast of Palmetto, Manatee County, Florida, no. 2428a. Approaching *P. commutatum* Schult. in habit and general appearance, but the large and very acute spikelets readily distinguish it from that species.

Agrostis idahoensis n. sp.

Culms caespitose, slender, 2–4 dm. tall, erect, bearing usually two distant leaves below the middle; sheaths loosely embracing the culm, the lower ones short, the uppermost one elongated 4.5–9 cm. long; ligule membranous 3–4 mm. long, obtuse, cut-toothed at the apex, minutely pubescent on the outside; leaves narrowly linear, erect, 4–9 cm. long, 1–2 mm. wide, acuminate at the apex, rough, particularly on the margins; panicle oblong, 6–12 cm. long, 2.5–4.5 cm. wide, the axis smooth below, slightly scabrous above as are the branches and pedicels; branches of the panicle ascending 5.5 cm. long or less, usually in 5's, the secondary branches

more or less spreading; spikelets lanceolate and acuminate when closed, 2 mm. long, generally about equaling the pedicels, which are decidedly thickened at the apex and usually more or less spreading; empty scales acuminate, purplish, scabrous on the keels, the first longer than the second; flowering scale about three-fifths as long as the first scale; palet wanting.

Collected by A. A. and E. Gertrude Heller, at Forest, Nez Perces County, Idaho, on July 16, 1896, at an altitude of 3,500 feet, no. 3431. A very delicate and beautiful member of the genus and perfectly distinct from any species of that region with which I am acquainted.

DANTHONIA GLABRA n. sp.

Whole plant, with the few exceptions noted below, glabrous. Culms 4-7 dm. tall, erect, simple, striate, slightly rough just below the panicle, and puberulent for some distance below the brown nodes; sheaths smooth, only those at the base of the culm exceeding the internodes, the remainder much shorter than their internodes; ligule densely ciliate with silky hairs 1-2 mm. long; leaves smooth excepting at the apex, 1.5-3 mm. wide, erect, those on the sterile shoots 1.5 dm. long or more, those on the culm 5-10 cm. long, the basal ones shorter than the rest; panicle 5-8 cm. long, its axis, together with the erect or occasionally spreading branches, hispidulous; spikelets, including awns, 1.7-2 cm. long, 5-8-flowered, on hispidulous appressed pedicels, 2.5-7 mm. long; empty scales acuminate, the first 3-nerved, 1.3-1.7 cm. long, equalling or slightly shorter than the 5-nerved second; flowering scales 5-6 mm. long to base of the teeth, pubescent on the lower half of the margins, and occasionally sparingly so on the mid-nerve near the base, with erect silky hairs about 2 mm. long, teeth including awns 1.5-3 mm. long, one of the awns usually shorter than the other, the central awn 9-12 mm. long, more or less spreading, yellowish brown at the base, strongly hispidulous toward the green apex, about once twisted; palet about reaching to the base of the awn or nearly so, strongly ciliate on the two nerves.

Type specimens collected by Dr. John K. Small, on Little Stone Mountain, DeKalb County, Georgia, on July 5, 1895. In this the flowering scales are entirely glabrous on the back. In another form from New Jersey the flowering scales are sparingly pilose on the back near the base. This latter form was secured by Dr. John Torrey, at Quaker Bridge, in May, 1830; also by a party of the Torrey Botanical Club at Forked river, on May 30, 1896.

This is abundantly distinct from *D. sericea* Nutt., to which it is allied. In that species the sheaths are densely villous, and the marginal hairs of the appressed-pubescent flowering scales are about 3 mm. long, instead of 2 mm. as in *D. glabra*.

An apparently undescribed Species of *Prunus* from Connecticut.

BY JOHN K. SMALL.

(PLATE 292.)

To venture to describe a new species of *Prunus* from the long explored territory of the State of Connecticut may seem to some to be questionable, but so clear a case has recently come to my notice that to do otherwise would be unjust to nature.

The plant in question is a low slender branching shrub, reaching a maximum height of about twelve decimeters. The main stem is clothed with a dark rough bark and, like the principal branches, is leafless, the ascending twigs and branchlets only producing leaves. The small white flowers are confined to the branchlets just below the leaf-producing parts. The small globose drupe is deep purple or almost black, covered with an abundant light blue bloom. To the taste the fruit is bitter and astringent.

The species occurs on a cross-shaped area, on a low gravelly ridge near Long Island Sound, at Groton, Connecticut, and is related to *Prunus maritima*, which grows in the immediate neighborhood and under precisely the same conditions, thus affording an excellent opportunity for a comparison of characters:

1. The new species is lower, more slender and delicate in habit than *Prunus maritima*, maturing both its leaves and fruit earlier in the season.
2. The small suborbicular type of leaf, as against the larger elongated type characteristic of the beach plum. This character is very apparent from the time the buds begin to unfold.
3. The smaller flowers with the suborbicular petals, which are about 5 mm. in diameter and abruptly narrowed at the base, as compared with the larger broadly obovate petals of *Prunus maritima*, which are gradually narrowed at the base.